Brandon Lazard

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EDUCATION

The University of California, Los Angeles, Los Angeles, CA — Expected June 2025
Master of Geophysics and Space Physics, GPA: 3.8

- NASA FINESST Fellow

The University of Texas at Austin, Austin, TX — 2023
Bachelor of Science in Physics
Bachelor of Science in Astronomy

TECHNICAL SKILLS

Key Skills: MHD, Simulations, Lab Circuitry, Data Acquisition Systems, Liquid Metal Handling, Rotating Systems
Platforms: Windows, Linux, Mac OS
Programming Languages: Python3, Julia, MatLab, Arduino
Applications: SolidWorks, AutoCad, Adobe, Git, OpenFoam, LabVIEW, Microsoft Office
Machining: Drillpress, Mills, Lathes, CNC

RESEARCH & EXPERIENCE

UCLA SPINLab, Los Angeles, CA — 2023-Present
Graduate Research Assistant

- Operate multiple rotating, fluid convection devices to perform experiments and gather novel data
- Maintain liquid gallium storage and cleaning to be used for further experiments
- Maintain magnet cooling and usage for rotating magneto-convection experiments for liquid gallium
- Prepared and presented quarterly presentations on current literature for discussion amongst current experts in the field

Space Physics Laboratory, Austin, TX — 2021-2023
Undergraduate Research Assistant

- Extracted data from NASA's CDAWeb and wrote Python3 scripts to analyze correlations in density and magnetic field data of the solar wind
- Organized and conducted public outreach to 9 primary schools and hosted star gazing nights at 3 national parks
- Presented to a general audience of 100+ people showcasing the importance of solar physics

SELECTED PROJECTS

Solar Convection Zone Modeling, University of California, Los Angeles, CA — 2024

- Perform numerical simulations on a high performance computing cluster to collect novel simulation data comparing viscosities in solar convection zone models
- Write open-source post-processing scripts in Python3 to analyze simulation outputs
- Present simulation results to a conference poster session with 200+ attendees
- Collaborated with a team of 8 to write 950+ lines of code of the open-source code Rayleigh only 3 months after first utilizing the code

Laboratory Experiments of a Convection Device, University of California, Los Angeles, CA — 2023-2024

- Planned size and specifications of a convection tank to reach the desired parameter regime for experiments
- Constructed a 1 meter tall fluid tank as a tool for future students to perform convection experiments
- Constructed a voltage divider for a data-acquisition system used to read temperature measurements
- Programmed an arduino to read real-time temperature measurements in Python3
- Wrote Python3 scripts to analyze thermometry data and interpret the efficiency of heat transfer